

Chapter 7: Section 4(f) Resources

7.1 Introduction

The US Department of Transportation Act of 1966 (USC 138 and USC 303), Section 4(f), states that the Secretary of Transportation may not approve the use of land from a publicly owned park, recreation area, or wildlife and waterfowl refuge, or any historic sites unless a determination is made that:

- There is no feasible and prudent alternative to the use of land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use.

Section 4(f) resources were reviewed pursuant to 23 CFR 771.135 (a), Section 4(f) of the US Department of Transportation Act of 1966 (49 USC 303) and Section 138 of the Federal-Aid Highway Act of 1968.

7.2 Description of Section 4(f) Resources

Schools

Section 4(f) properties associated with schools are limited to the Westfield Washington School campus located northeast of the intersection of US 31 and SR 32. According to Mr. Marty McGaughey (Director of Facilities, Westfield Washington Schools), public use areas within the campus include the football field and track, three baseball fields, three playgrounds, soccer fields, and tennis courts (Appendix A, Sheet 9). Alternatives F1 through F6 would impact approximately 0.9 acres of a vacant grass lot adjacent to the football field at the Westfield High School. In a memo dated May 28, 2002, Mr. McGaughey included a map illustrating public use areas within the Westfield Washington School campus (see Appendix C, Section 4(f)). The aforementioned vacant parcel, though part of the school property, is currently unused and, while publicly owned, is not available to the public for park or recreational use; therefore, it does not fall within the Section 4(f) criteria. A retaining wall is proposed along the east side northbound ramp from SR 32 onto US 31, avoiding the football field/track. No Section 4(f) Evaluation is required for public use recreational areas associated with schools as there would be no permanent or temporary use from any of the school properties that currently are classified as a Section 4(f) property.

Public Parks and Recreation Areas

None of the proposed build alternatives would require the permanent or temporary use from any public park, recreation area, wildlife or waterfowl refuge or sites eligible for or included in the National Register of Historic Places. Alternatives F1 through F6, however, would require relocating the proposed entrance to the future MacGregor Park from US 31 to SR 38 (Appendix A, Sheet 13). The access from SR 38 would be provided to the boundary of the park and would not require any temporary or permanent use from the park property. As a result, there would be no Section 4(f) use.

Trails

Monon Greenway

The portion of the Monon Greenway that falls within the existing US 31 right-of-way is owned by the State of Indiana (Appendix A, Sheet 5). At this location, all of the build alternatives would include the replacement of the existing twin bridges with a structure, which would allow for the continued use and operation of the Monon Greenway. All construction activity would be restricted to within the existing US 31 right-of-way; therefore, none of the build alternatives would result in the permanent or temporary use of the Monon Greenway. As such, no Section 4(f) Evaluation is required for the Monon Greenway. During construction, INDOT would make every attempt to keep the Monon Greenway open; however, for safety purposes, intermittent and short-term closure of the trail may be necessary.

South Union Trail

For the build alternatives, there would be a temporary use of the South Union Street Trail during construction of the 161st Street interchange (Appendix A, Sheets 7 and 14). A temporary closure would be necessary to conduct grading and paving operations on 161st Street. Alternatives G1 through G6 would also bridge the South Union Trail along Westfield Boulevard, resulting in temporary use and closure during construction (Appendix A, Sheet 15). When complete, modifications to 161st Street would not affect the usability of the trail. No permanent use will be required from the South Union Trail as a result of the build alternatives.

Section 4(f) does not apply to a temporary occupancy where there is documentation that the officials having jurisdiction over the protected resource agree that the temporary occupancy will: 1) be of short duration and less than the time needed for construction of the project; 2) not change the ownership or result in the retention of long-term or indefinite interests in the land for transportation purposes; 3) not result in any temporary or permanent adverse change to the activities, features, or attributes which are important to the purposes or functions that qualify the resource for protection under Section 4(f); and, 4) include only a minor amount of land.

Mr. Kevin Buchheit (Director, Community Development Department, Town of Westfield) was contacted as the jurisdictional official of the South Union Trail. In a letter dated April 30, 2003, the Town of Westfield provided its concurrence with the criteria in respect to Alternatives F1 through F6 and G1 through G6 (Appendix C, Section 4(f)); therefore, no Section 4(f) Evaluation is required for the South Union Trail.

Eligible Historic Properties

There are three historic Section 4(f) resources within the APE of the project. Details concerning each of these historic properties are included in Section 5.6.1. There would be no permanent or temporary use from any historic Section 4(f) resource that is listed on or eligible for listing on the National Register of Historic Places. Descriptions of Section 4(f) issues concerning each resource are as follows:

Hunt House (Appendix A, Sheets 10 and 11)

The boundary of the historic property includes the house and its immediate surroundings (Figure 5.6-1). The property's current access is from US 31 to the east. Alternatives F1 through F6

would incur the loss of this access. Access would be provided to the property from the north, off of 191st Street. Compensation for the access would be provided by INDOT. A retaining wall is proposed along the west side of the southbound ramp from 191st Street to US 31, avoiding impacts to the historic property. Alternatives G1 through G6 would not result in any roadway improvements along the existing US 31 where the Hunt House is located. There would be no permanent or temporary use of the historic property associated with the Hunt House; therefore, no Section 4(f) Evaluation is required.

T.J. Lindley Farm (Appendix A, Sheets 12, 13, 19, and 20)

The boundary of the historic property includes the farmstead and its immediate surroundings (Figure 5.6-2 and 5.6-3). The existing access for Lindley Farm to US 31 would be eliminated with Alternatives F1 through F6. New access to the parcel would be provided from SR 38 (Appendix A, Sheets 12 and 13). Compensation for the access would be provided by INDOT. A retaining wall is proposed along the west side of the southbound ramp from SR 38 to US 31, avoiding use of historic property. Alternatives F1 through F6 would require no permanent or temporary use of the historic property associated with the Lindley Farm; therefore, no Section 4(f) Evaluation is required.

Alternatives G1 through G6 would not change access. The proposed alignment would bypass the west side of the farm. The boundary of the historic property would be avoided. Alternatives G1 through G6 would require no permanent or temporary use of the historic property associated with the Lindley Farm; therefore, no Section 4(f) Evaluation is required.

Proposed Westfield Historic District (Appendix A, Sheet 9)

The boundary of the proposed Westfield Historic District includes the buildings in the immediate vicinity of Union Street and SR 32 (Figure 5.6-4). There is no effect on the district from any of the build (US 31) alternatives. Alternatives F1 through F6 and G1 through G6 would require no permanent or temporary use of the historic property associated with the proposed Westfield Historic District; therefore, no Section 4(f) Evaluation is required.

Chapter 8: Comments and Coordination

8.1 Public Involvement

The Indiana Department of Transportation (INDOT) recognizes that the success of any transportation project relies heavily upon community awareness and involvement throughout the duration of the project. It is essential to maintain a close working relationship with the potentially affected communities near the project area. Public involvement allows for transportation solutions that integrate project purpose and need with public opinion and community goals.

The US 31 Improvement Project includes an extensive public involvement program. This program is designed to ensure that the public has numerous opportunities to learn about project developments, and that the project team has the opportunity to learn about individual and community concerns.

The key elements of public involvement are:

- Public meetings
- Briefings with public officials
- Stakeholder meetings and contacts
- Public hearing
- Website
- Newsletters
- Video
- Media relations

8.1.1 Public Meetings

Two public information meetings were held at key points in the US 31 study; one following publication of the Purpose and Need Statement, and another upon the release of the Preliminary Alternatives Analysis and Screening Report.

Public meeting #1, June 27, 2001

Approximately 125 people attended the open-house style meeting at Carmel High School on June 27, 2001, to learn about the Purpose and Need Statement and to view maps of preliminary alternatives to be considered for the project. A copy of the meeting minutes is located in Appendix C, Purpose and Need.

Participants viewed a video presentation outlining the Purpose and Need Statement, as well as, display boards featuring maps of preliminary alternatives, traffic levels, population, and other key information. Project team members answered questions and addressed comments during one-on-one discussions with citizens.

Several people expressed concerns about possible effects to their homes and property. Many people indicated they did not favor off-alignment alternatives to the west of the existing route, particularly alignments that would follow Spring Mill Road or Ditch Road. Several developers sought information that was more specific to their individual interests.

Approximately 30 members of the public submitted written comments during and after the public meeting. Most of the comments fell into the following categories: support for upgrading US 31 in its current path, opposition to any western alignments; and questions about potential impacts on specific neighborhoods.

Public meeting #2, July 30, 2002

More than 600 people attended a public meeting at Westfield High School on July 30, 2002 to learn about the findings of the US 31 Preliminary Alternatives Analysis and Screening Report. The meeting focused on the alternatives that were carried forward for further analysis in the Draft Environmental Impact Statement. A copy of the meeting minutes is located in Appendix C, Preliminary Alternatives.

The meeting at Westfield High School included an open-house session and a public comment period. At the open-house session, maps and information boards outlining the remaining alternatives were displayed in the school cafeteria. Project team members answered questions and addressed comments.

Many people who attended the public meeting expressed opposition to and concerns about Alternative G, which includes an eastern bypass of Westfield. Community members referred to changes in quality of life, fear of additional development, and concern for property values. Attendees also raised questions and concerns about interchanges and cross-street access to an improved US 31.

The public comment session was held at the Westfield High School auditorium to accommodate the several hundred people who attended. There was notable opposition to Alternative G from many attendees and a few individuals expressed favor in regard to Alternative F.

Written comments received during and after the meeting overwhelmingly opposed Alternative G. The reasons given included concerns about potential impacts on Westfield's small-town atmosphere and pleasant quality of life; fears for the safety of children, predictions of declining property values, and opposition to the noise and visual impacts a freeway might bring.

In excess of 100 phone calls, letters and e-mails were received from individuals who strongly oppose Alternative G. That number consists of more than half of the 170 public comments received after the public meeting.

In addition, a number of organizations including the Town of Westfield, the Westfield-Washington School Corp., and the Westfield/Washington Chamber of Commerce all weighed in with letters in opposition to Alternative G. A coalition of Homeowners Associations, stating that they represent 905 households in Westfield, also wrote in opposition to Alternative G.

Several people expressed concerns regarding the potential impacts to their neighborhoods or property in relation to Alternatives F and G. Many concerns were in relation to the location and placement of interchanges, as well as, the potential for increases in noise levels throughout the project area. Additional comments received indicated a strong opposition to Alternative G as well as support for the 'No-Action Alternative' stating that current congestion on US 31 is not severe.

8.1.2 Public Officials Briefings

Briefing #1, June 27, 2001

More than 25 representatives of local governments and agencies were invited to attend a public officials briefing immediately preceding the first public meeting on June 27, 2001. Individuals in attendance included the Town of Westfield; City of Carmel; Carmel's US 31 Overlay Task Force; Hamilton County commissioners, council members and highway department officials; and, State Representative Gerald Torr. Several local business leaders and interested residents were also present.

Participants viewed a computer presentation outlining the Purpose and Need Statement and information boards including maps of preliminary alternatives, traffic volumes, population, and other key information. Project team members answered questions and addressed comments.

Briefing #2, July 30, 2002

More than 40 local and state government officials and representatives of government agencies were invited to attend a public officials briefing immediately prior to the second public meeting on July 30, 2002. Approximately 50 people attended, representing not only government entities but also civic organizations and neighborhood groups. In addition to local government representatives, a staff member from Lieutenant-Governor Joe Kernan's office and State Representative Gerald Torr.

All of the alternatives, with the exception of Alternative G, considered during the screening phase had been previously presented to Town of Westfield and City of Carmel officials (in February 2002) and to Hamilton County officials (in April 2002) to obtain the officials' input and comments.

At the briefing, participants were presented with information which summarized the screening process and the alternatives carried forward into the DEIS. Project officials answered questions and addressed comments following the presentation. Officials were invited to view the information boards and maps on display in the adjacent cafeteria prior to the public open house.

8.1.3 Stakeholder Meetings

Members of the project team have had numerous contacts with stakeholders including residents, public officials, developers, business people, property owners, and other members of the public with an interest in the US 31 Improvement Project (Table 8.1-1).

In addition, project team members have answered questions and addressed comments throughout the project via phone calls.

**Table 8.1-1
Stakeholder Meetings**

Date	Met With	Topic
2003		
4/22	Parks at Spring Mill	Local Concerns about US 31
4/17	Don Gardner (Circle Drive)	Local Concerns about US 31
4/15	Bob Leeper	Local Concerns about US 31
4/9	Dan Gardner (Circle Drive)	Local Concerns about US 31
3/26	Circle Drive Neighborhood (14 citizens) and Mayor Brainard	Local Concerns about US 31
3/24	Tim and Micki Fortner (Homeowners)	Concerns about the 136 th Street Interchange
3/13	Tammy Pahs and Paula Lord (Circle Drive)	Local Concerns about US 31
3/11	Steve Lower	Local Concerns about US 31
3/4	INDOT	Engineer's Report
2/27	Fredric Lawrence (Lawyer for Truss Manufacturing)	Potential impacts of US 31
2/17	Lauth Property Group	Potential impacts of US 31
2/14	Simon Property Group	Potential impacts of US 31
2/11	Three citizens	Potential impacts of US 31
1/27	American Consulting (Clay Terrace)	Potential impacts of US 31
2002		
8/20	Hamilton County, Carmel, Westfield and other local officials	Local concerns about US 31
7/29	Union Planters Bank/CB Richard Edwards	Local concerns about US 31
7/25	US 31 Task Force	Local concerns about US 31
6/28	Joe Downs (Lauth Property Group)	SW Quad of 146 th Street and US 31
6/18	Clarion Health Partners	Local concerns about US 31
6/11	Hamilton County Plan Commission	Thoroughfare Plan
5/21	Mike Hollibaugh (City of Carmel), Paul Sprager (US 31 Task Force) and John Myers	US 31 Status Update
5/9	Jim Buddenbaum (Attorney) and Jim Langston (Langston Development)	Future residential development on the east side of Westfield between 161 st Street and SR 32
4/30	David Johnston (Town of Westfield), Kevin Buchheit (Town of Westfield) and 5 development firms	Preliminary Alternatives Analysis and Alternatives F and G
4/29	Bill Ranek (Simon Property Group), Jim Klausmeier and Ron Greiwe (Pflum, Klausmeier & Gehrm)	Potential impacts to Greyhound Pass shopping center near 146 th Street
4/24	Tim Dora (Dora Brothers Hospitality Corp.)	Future Development – Hilton Garden Inn
4/23	Jim Neal and Matt Morasch (Hamilton County)	Preliminary Alternatives
4/17	Greg Land (CMC Properties)	Future Development NW Quad of 131 st Street and US 31 intersection
3/27	Mike Hollibaugh (City of Carmel), Joe Downs and Mike Jones (Lauth Property Group)	Future development of SW quad of 146 th Street and US 31 and future development of 131 st and 161 st Streets
3/4	Paul Clendenen (Clarion Health Partners)	Future Hospital in NE quad of I-465 and US 31
2/28	David Johnston, Kevin Buchheit and Mike Maddox (Town of Westfield) and Matt Weir (HNTB)	Obtain input on preliminary alternatives
2/6	Mike Hollibaugh (City of Carmel) and Paul Sprager (US 31 Task Force)	Obtain input on preliminary alternatives

Table 8.1-1 continued

Date	Met With	Topic
2002		
2/5	Englewood Development Co.	Potential impacts of US 31
1/17	Mike Hollibaugh (City of Carmel) and Paul Sprager (US 31 Task Force)	Future developments along US 31
2001		
12/20	Pflum, Klausmeier and Gehrum	Potential Impacts of US 31
12/6	Joe Downs (Lauth Property Group)	Future development along SW quad of 146 th Street and US 31
12/6	Hamilton County Leadership Academy	US 31 project presentation
11/27	David Johns and Kevin Buchheit (Town of Westfield)	US 31 status update and future development in Westfield
11/16	Pilgrim Lutheran Church officials	Potential impacts of US 31
10/26	Clint Sparks (American Consulting) and Jim Neal (Hamilton County)	Future development at SR 431 and US 31
10/10	Circle Drive Neighborhood	Potential impacts of US 31
9/26	Appraisal Institute	Potential impacts of US 31
8/7	US 31 Task Force	Local concerns regarding US 31
7/30	Paul Clendenen and Bruce Melchert (Clarion Health Partners)	Future developments in NW quad of US 31 and I-465
7/26	US 31 Task Force	Local concerns about US 31 project
6/28	US 31 Task Force	Local concerns about US 31 project
6/26	Methodist Hospital officials	Potential impacts of US 31
6/11	Jack Moran (Lauth Property Group)	Project update and potential impacts
6/7	US 31 Task Force	Local concerns about US 31 project
5/31	Ken Cave (Lauth Property Group)	SW quad of US 31 and 146 th Street
5/24	Mike Hollibaugh (City of Carmel)	Project update on US 31
5/17	Abbe Hohmann (Turley, Martin and Tucker)	Potential impacts to Pilgrim Lutheran Church
4/10	Westfield, Simon Property Group and HNTB	Potential impacts to 146 th Street
4/10	US 31 Overlay Zone Task Force	US 31 project update
2/14	Carmel & Westfield police and fire departments	US 31 project update
1/30	Hamilton County, Westfield and FHWA	Hamilton County proposal for 146 th Street
1/19	Sharon Clark, Steve Holt, Les Locke and Mike Howard (Howard County)	US 31 project update
1/18	David Johnston, Kevin Buchheit and Mike McDonald (Town of Westfield)	US 31 overlay land use plans and Hamilton County 146 th Street plan
1/17	Hamilton County Chamber Coalition (2001 Governmental Affairs Reception)	US 31 project presentation
2000		
12/14	Indiana Farmers Mutual Insurance	Local concerns about US 31
12/1	Indiana Farmers Mutual Insurance	Local concerns about US 31
11/30	Carmel/Clay Special Studies Committee	SW quad of US 31 and I-465
11/26	US 31 Overlay Task Force	Illinois Street and Depressed US 31
11/26	David Johnston (Town of Westfield)	Project update
11/20	Pilgrim Lutheran Church	Potential impacts to building
11/20 to 21	Westfield/Washing Chamber of Commerce, Carmel/Clay Chamber of Commerce, Washington Township, Hamilton County Alliance, Town of Westfield, City of Carmel and US 31 Coalition	Discuss US 31 project video
10/5	US 31 Overlay Task Force	Proposed improvements to US 31
9/19	Carmel Plan Commission Meeting	SE quad of US 31 and 146 th Street
8/17	US 31 Overlay Task Force	Local concerns about US 31
8/7	David Johnston (Town of Westfield)	Local concerns about US 31

Table 8.1-1 continued

Date	Met With	Topic
2000		
7/20	Hamilton County Highway Department and Gregg Henneke (American Consulting)	US 31 and 146 th Street
7/20	Carmel Plan Commission and Parsons-Brinkerhoff	Project Coordination, future developments
7/20	US 31 Overlay Task Force	Local concerns about US 31
7/18	David Johnston (Town of Westfield)	Local concerns about US 31
6/11	Lauth property Group	Local concerns about US 31
4/19	Carmel area developers	Local concerns about US 31
4/14	Westfield/Washington Plan Commission	Local concerns about US 31
2/28	Simon Property Group	Local concerns about US 31

8.1.4 Public Hearing

A formal public hearing on the DEIS is scheduled for June 30, 2003 at the Dale E. Graham Auditorium at Carmel High School, 520 E. Main Street, Carmel, IN. Comments on the DEIS are due by August 4, 2003 and should be submitted to:

Cory Grayburn
Parsons Transportation Group
11405 North Pennsylvania Street, Suite 100
Carmel, Indiana 46032

Comments may also be submitted via the project web site at www.us31indiana.com.

8.1.5 Website (www.us31indiana.com)

The project website is an up-to-date, comprehensive source of information that has drawn consistent use by interested citizens. The site has registered more than 300,000 hits since it was launched January 1, 2001.

Information on the site includes a project overview, full texts of the Purpose and Need Statement, Preliminary Alternatives Analysis and Screening Report, and the DEIS, detailed maps of alternatives, answers to frequently asked questions, and periodic updates on the project's status.

The website is well publicized, located on every newsletter and press release, as well as, being part of media coverage regarding the project. The launch of the website itself generated stories in local newspapers and attracted television coverage.

In July and August of 2002, activity on the newly redesigned website reached record levels. The July 30, 2002 public meetings drew extensive media coverage and the newsletter mailing drew hundreds of people to the site.

The website's e-mail components have provided another avenue for feedback from citizens. The project has received more than 240 electronic comment forms and e-mails to the project team.

8.1.6 Newsletters

Four newsletters were produced and distributed at these key points in the project:

- *Fall 2000* – Introduced the project
- *Spring 2001* – Summarized the Purpose and Need Statement and announced the first public meeting.
- *Summer 2002* – Summarized the Preliminary Alternatives Analysis and Screening Report and announced the second public meeting.
- *Spring 2003* – Summarized the DEIS and announced the public hearing.

One more newsletter is scheduled for Fall 2003 to present the results of the Final Environmental Impact Statement (FEIS).

The newsletters have been made available in several ways:

- by mail to nearly 1,400 addresses in the project database
- by e-mail to 341 addresses in the project's electronic database
- at libraries and government offices in Carmel and Westfield
- on the project website

The newsletters have also served as a key part of the informational materials for news media covering the project.

8.1.7 Video

An informational video, providing an overview of the goals and purpose of the US 31 Improvement Project was distributed in Fall 2000. The Video included interviews with Transportation Commissioner Cristine Klika and two local officials, Carmel Mayor James Brainard and Westfield Town Council President Mike McDonald.

Copies of the video were made available to the public through the Carmel, Westfield, and Fishers public libraries; Carmel City Hall and Westfield Town Hall; and the US 31 project office.

Officials with City, Town and County governments, as well as, local chambers of commerce, school corporations, and civic organizations also received copies of the video and were encouraged to share them.

8.1.8 Media Relations

Area news media outlets including newspapers, television stations and radio stations are part of the project media list. News releases and direct contacts from public-involvement staff served to alert local news media of project developments.

Individual briefings were held with reporters prior to public meetings in an attempt to ensure that the reporters thoroughly understood the issues.

These efforts have produced newspaper articles, in addition to, television and radio exposure before the public meetings, increasing meeting attendance. Coverage of the meetings has also contributed to website usage, and generation of public comments.

8.2 Agency Coordination

Agency coordination efforts for the US 31 Improvement Project included the following:

- Early Coordination Packet, December 2000
- Interagency Review Meeting and Field Trip, Purpose and Need Statement/Range of Preliminary Alternatives to be Considered, June 28, 2001. The following agencies attended the meeting:
 - United States Fish and Wildlife Service
 - United States Environmental Protection Agency
 - Indiana Department of Transportation
 - Federal Highway Administration
- Interagency Review Meeting and Field Trip, Preliminary Alternatives Analysis and Screening Report, August 7, 2002. The following agencies attended the meeting:
 - United States Fish and Wildlife Service
 - United States Environmental Protection Agency
 - Indiana Department of Natural Resources
 - Indiana Department of Transportation
 - Federal Highway Administration
- General correspondence with federal, state and local agencies to obtain resource information.

The Early Coordination Packet was distributed to the following agencies and organizations:

Federal

- United States Department of Agriculture, Natural Resources Conservation Service
- United States Army Corps of Engineers
- United States Department of the Interior, National Parks Service
- United States Department of the Interior, Fish and Wildlife Service
- United States Department of Housing and Urban Development
- United States Environmental Protection Agency

State

- Indiana Department of Environmental Management
- Indiana Department of Natural Resources, Division of Fish and Wildlife
- Indiana Department of Transportation, Greenfield District
- Indiana Department of Transportation, Intermodal Transportation Division
- Indiana Geological Survey

Local

- Indianapolis Metropolitan Planning Organization
- City of Carmel
- Carmel Fire Department
- Clay Township
- Washington Township
- Hamilton County
- Town of Westfield
- Westfield Fire Department

Section 106 Consulting Parties

- Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology
- Historic Landmarks Foundation of Indiana
- Hamilton County Historical Society
- Hamilton County Historian
- Carmel/Clay Historical Society
- Westfield/Washington Historical Society
- Delaware Tribe of Western Oklahoma
- Miami Tribe of Oklahoma
- Monon Railroad Historical & Technical Society

Appendix C contains agency correspondence that has been received over the course of the project to date. Comments made by the agencies have been addressed in the appropriate sections of the Draft Environmental Impact Statement.

Chapter 9: List of Preparers

Name	Education and Experience	Primary Responsibilities
Federal Highway Administration		
Robert Dirks, P.E., Environmental Engineer	B.S., Civil Engineering. 9 years experience in environmental	Project Manager for FHWA, Indiana Division.
Indiana Department of Transportation		
Amanda Hamm, Environmental Scientist	B.S., Natural Resources & Environmental Science. 4 years environmental/NEPA experience.	Document review, public involvement, NEPA and Section 106 support.
James Juricic, Environmental Assessment Section Manager	B.S., Forestry. 33 years environmental/NEPA experience.	Document review.
Janice Osadczuk, Chief Division of Environment, Planning and Engineering	B.A., Biology / M.A., Zoology - Ecology. 28 years environmental related experience.	Document review.
Paul C. Schmidt, PE, Engineering Assessment Section, INDOT Environment, Planning & Engineering Division	B.S., Civil Engineering. 17 yrs engineering experience with INDOT. Duties included road and bridge project design, engineering assessment, and project management	Review and Coordination of Engineering and Scoping issues.
Brad L. Steckler, P.E., Manager of Engineering Assessment	M.S., Engineering. 17 years transportation experience.	Oversight of engineering issues, alternatives' development and traffic operation.
Parsons Transportation Group, Inc.		
Daniel E. Allen, EIT, Roadway Design Engineer	B.S., Civil Engineering, 2002. Assisted in Highway Design.	Geometric Design of Alternatives. Analysis of Alternatives.
Mark Fialkowski, Project Manager	M.S., Transportation. 12 years experience in NEPA studies for transportation projects.	Project management, agency coordination and public involvement.
Cory Grayburn, Deputy Project Manager	B.S., Environmental Resource Management. 17 years experience in NEPA studies and impact assessments.	Project management, agency coordination, public involvement, document preparation and review, and QA/QC.
Jason Hignite, Senior Environmental Planner	M.A., Natural Resources Management. 12 years experience in natural resource management/NEPA documentation and project management.	Environmental features maps, field reconnaissance and annotation, impact analysis, GIS, document preparation and QA/QC.
Kevin D. Linne, P.E., Roadway Design Engineer	B.S., Civil Engineering. 8 years engineering and design experience relating to roadways, drainage, commercial site development. Design portions of EIS and EA documents.	Public Involvement, corridor study, preliminary alignment analysis and screening, and preliminary design of preferred alternatives.
Jim Lutterbach, P.E., Roadway Design Manager	B.S., Civil Engineering. 15 years engineering experience. Involved with road, bridge and traffic design projects	Management of local design staff, coordination of engineering activities and document preparation.
Jessica L. Manifold, Environmental Planner	B.S., Public Affairs/Environmental Science. 2.5 years experience in environmental science, project management and NEPA documentation.	Field reconnaissance and annotation, impact analysis, document preparation and QA/QC.

Craig Moore, P.E., Transportation Engineer	M.S., Transportation Engineering. 4 years experience in transportation engineering and planning. EIS, industrial corridor planning, transit studies and traffic impact studies.	Environmental spatial database creation; GIS; environmental impact analysis; document preparation.
Peter Reinhofer, P.E., Transportation Engineer	B.S., Civil/Environmental Engineering. 8 years experience in transportation engineering and planning. EIS and traffic impact studies.	Lead traffic engineer; data collection; traffic operations analysis; document preparation.
Timothy B. Selover, P.E., Transportation Engineer	B.S., Civil/Environmental Engineering 8 years engineering experience. Involved with preparation of EIS's, including noise, air, accident, traffic, socioeconomic and public involvement.	Public Involvement, accident, air and noise analyses. Coordination and production of deliverables.
Wm Scott Midness Principal Landscape Architect	B. Landscape Architecture. 21 years experience in landscape architecture, urban design and project management.	Aesthetic and visual resources and impacts; field reconnaissance; document preparation.
Joel McElhany Senior Landscape Architect	B. Landscape Architecture. 9 years experience in landscape architecture, urban design and project management.	Aesthetic and visual resources and impacts; field reconnaissance; document preparation.
Parsons Engineering Group, Inc.		
William L. Borchardt Environmental Specialist	B.S., Geology.	Field reconnaissance and annotation; document preparation and QA/QC.
ASC Group, Inc.		
Michael Striker Principal Investigator	M.A., Anthropology. 11 years experience managing various cultural resources studies.	Archaeological field research, methodology and QA/QA of archaeological reports.
The al-Chalabi Group, Ltd.		
Margery al-Chalabi President	M.S., Regional Planning. 36 years of urban and regional planning, economic development and transportation planning.	Socio-Economic Forecasts and Revisions; census data analysis.
Suhail al-Chalabi Vice President	M.S., Regional Planning. 36 years of urban and regional planning, economic development and transportation planning.	Socio-Economic Forecasts and Revisions; census data analysis; GIS.
Doe Anderson, Inc.		
Karen Merk-Otolski Account Manager	B.A., Journalism. 2 years experience with public information and involvement; 15 years experience in journalism, editing.	Community and media relations; press releases and newspaper communications; public meeting coordination; webpage development.

Gibson & Associates		
Elizabeth Gibson, Operating Officer	Chief B.S., Psychology, certified economic development specialist. 25 years experience in community economic development, socioeconomic analysis, opinion surveys, research and public involvement.	Public involvement (opinion survey of businesses along the corridor). Coordination and production of related deliverables.
J.F. New and Associates		
Marc Woernle, Manager, Ecological Services	B.S., Botany.	Ecological field work and reporting.
USI Consultants		
Gregory R. Wendling, P.E., Chief Transportation Engineer	B.S., Civil Engineering. 12 years experience in transportation design and construction.	Engineering analysis for roadway segments.
The Westerly Group		
Thomas W. Salmon II, ASLA Chief Designer	Over 25 years experience in landscape architecture, planning and historic restoration/preservation.	Conducted Architectural literature reviews, field investigations, Section 106 submittals and agency correspondence.
Camille Fife, President	M.A., History. 25 years experience in historic preservation.	Conducted Architectural literature reviews, field investigations, Section 106 submittals and agency correspondence.

Chapter 10: List of Acronyms

ADT	Average Daily Traffic
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
ATP	Alternate Transportation Plan
BMP	Best Management Practice
CAA	Clean Air Act
CAAA	Clean Air Act Amendment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRM	Cultural Resources Management
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
DHPA	Division of Historic Preservation and Archaeology
DNP	Division of Nature Preserves
DOT	Department of Transportation
EA	Environmental Assessment
ECP	Erosion Control Plan
EMS	Emergency Medical Service
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
ETR	Endangered and Threatened Species
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map

FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act 1981
GIS	Global Information System
HMVM	Hundred Million Vehicle Miles
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
INDOT	Indiana Department of Transportation
ISA	Initial Site Assessment
LOS	Level of Service
LUST	Leaking Underground Storage Tank
MIS	Major Investment Study
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAWQA	National Water Quality Assessment
NEPA	National Environmental Policy Act
NHP	Natural Heritage Program
NHS	National Highway System
NPL	National Priority List
NRC	Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PCBs	Polychlorinated Biphenyls

RCRA	Resource Conservation and Recovery Act
R/W	Right-of-Way
SARA	Superfund Amendments Reauthorization Act
SHPO	State Historic Preservation Officer
SHWS	State Hazardous Waste Site
SQG	Small Quantity Generator
SWQMP	Surface Water Quality Monitoring Program
SR	State Road
TCM	Traffic Control Measures
TDM	Transportation Demand Management
TM	Transportation Management
TRIS	Toxic Release Inventory System
TSD	Transport, Storage and Disposal
TSM	Transportation System Management
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WQC	Water Quality Certification

Chapter 11: Glossary

ADT	Average Daily Traffic - The average number of vehicles traveling a road during a 24-hour period, based on actual traffic counts and factor to account for seasonal and daily variations.
Aerobic	Living or occurring only in the presence of oxygen: aerobic bacteria. Of or relating to aerobes, organisms that require and utilize oxygen.
Amplitude	The level or value of a waveform or vibration.
Anaerobic	Lacking or seriously depleted of oxygen. Of or relating to organisms that can live in the absence of atmospheric oxygen.
Benthic	Bottom dwelling organisms.
CAAA	(Clean Air Act Amendments of 1990) Federal legislation that establishes maximum allowable levels for various pollutants. Where these standards are not attained, officials must take specified actions within a set time-frame or face sanctions, such as the loss of federal highway funds.
Carbon Monoxide	(CO) A colorless, tasteless gas produced primarily by inefficient combustion of organic fuels in transportation and industrial activities. Overly high levels of CO reduce oxygen in the bloodstream, preventing normal respiration. CO emissions are regulated by the CAAA.
Coleoptera	Scientific name for beetles.
Collector-Distributor (C-D)	A C-D is a roadway system that has two or more lanes in each direction that are adjacent to, and separated from the primary roadway. The purpose of this system is to minimize weaving maneuvers on the mainline facility. C-D roadways are different from frontage roads because access to adjacent property is not permitted.

Conductivity	Measures water's ability to conduct an electric current and is directly related to the total dissolved salts (ions) in the water. Called EC for electrical conductivity and is reported in micromhos per centimeter (umhos/cm) which has been recently renamed as uS/cm (microSiemens per centimeter). EC is temperature sensitive and increases with increasing temperature.
Conformity Determination	Requirement that the state or metropolitan transportation plan, programs, and projects be consistent with the purpose of the SIP. The CAAA prohibits federal funding approval of any project that does not meet this test.
Deciduous	Shedding or losing foliage at the end of the growing season.
DEIS	Draft Environmental Impact Statement – The initial or 'draft' version of the Environmental Impact Statement advertised in the Federal Register and available for public review.
Delineation	A visual, graphical or verbal description of boundaries.
Devonian	Refers to age which bedrock was formed; 408 million years before present.
Diamond Interchange	A diamond interchange consists of four one-way ramps, with one ramp in each quadrant. This configuration is one of the most common types of interchanges, and it is typically symmetrical. The interchange typically requires two traffic signals, and spacing between the ramp termini ranges from 400 feet to 800 feet.
Diptera	Scientific name for flies.
Discharge	The flow rate of a stream or river.
Displacement	The distance an object moves away from its original/starting position.

Dissolved Oxygen	The concentration of free (not chemically combined) molecular oxygen (a gas) dissolved in water, usually expressed in milligrams per liter, parts per million, or percent of saturation. DO levels are considered the most important and commonly employed measurement of water quality and indicator of a water body's ability to support desirable aquatic life.
EIS	Environmental Impact Statement - The National Environmental Policy Act (NEPA) requires an assessment of any adverse economic, social, and environmental effects of a proposed transportation project for which federal funding is being sought.
Encroachment	The gradual or silent movement of one land use upon another.
Ephemeroptera	Scientific name for mayflies.
Evapotranspiration	The process by which the earth's surface or soil loses moisture by evaporation of water and by transpiration from plants; the volume of water lost in this process.
Exfoliating Bark	Loose, platy bark on a tree (e.g. shagbark hickory); important bat habitat.
FEIS	Final Environmental Impact Statement – The version of the Environmental Impact Statement that incorporates agency and public comments and is prepared following the public hearing.
FHWA	Federal Highway Administration - A division of the U.S Department of Transportation, responsible for funding highway planning and programs.
Floodplain	The land adjacent to a waterway, built of alluvium and subject to repeated flooding.
Folded Diamond Interchange	Folded diamond interchanges are a variation of diamond interchanges, except that the entire interchange is on one side of the cross street. Two of the ramps are loop ramps. This configuration is typically used to avoid impacts and obstructions near interchanges.

Free Product	A liquid that has not dissolved into the soil or groundwater; often refer to oil or gasoline which forms pools when released; this refers to those pools.
FTA	Federal Transit Administration - A division of the U. S. Department of Transportation, responsible for transit planning and programs.
Geomorphic	Referring to the form or shape of the surface of the earth.
Geomorphic Zone	A zone that is similar in soil, and soil development due to similar geologic history and landscape position.
Glacial Outwash	Gravel to boulder size material, left from rapidly wasting glaciers.
Glacial Till	Sand and gravel deposited by glaciers.
Hydric Soil	A soil that is saturated with water long enough during the plant growing season to become anaerobic. This soil will usually be characterized by anaerobic soil zones and wetland vegetation.
Hydrology	The science of water, its properties, phenomena and distribution over the earth's surface.
Hydrophytic Vegetation	Plants that can exist in water and are periodically subjected to anaerobic conditions.
INDOT	Indiana Department of Transportation - Agency responsible for the design, construction, and maintenance of Indiana state highways and bridges.
Invasive Species	A species that invades a natural community and displaces one or more species; usually refers to plant species.
Invertebrates	Animal lacking a backbone or spinal column.
Jurisdictional Wetland	An area that exhibits hydric soils, hydrophytic vegetation and a source of hydrology in which the USACE exercises their regulatory jurisdiction per Section 404 of the CWA.

Lacustrine	Situated in a depression or a dammed river channel, lacking trees, shrubs, and any other emergent vegetation.
Lateral Access Interchange	This type of interchange has entrance and exit ramps that utilize parallel frontage roads to carry traffic to the cross street, compared to having direct ramp connections between the mainline and the cross street. This configuration is used to avoid potential right-of-way impacts and to limit the congestion on the cross street.
Lithic	Consisting of or relating to stone or rock.
Loam	An even mixture of sand, silt and clay; refers to soil texture
Loess	A wind blown deposit composed mainly of silt that originated in arid regions, from glacial outwash or from alluvium.
Longitudinal Encroachment	A highway improvement that crosses longitudinally to the regulatory floodplain.
Macroinvertebrates	Large invertebrates that are generally visible by the unaided eye.
Matrix Chroma	The background color of the soil, as opposed to the color of the mottles.
Megaloptera	Scientific name for the order that includes dobsonflies, fishflies and alderflies.
Mitigation	Steps taken to avoid or minimize negative environmental impacts. Mitigation can include: avoiding the impact by not taking a certain action; minimizing impacts by limiting the degree or magnitude of the action; rectifying the impact by repairing or restoring the affected environment; reducing the impact by protective steps required with the action; and compensating for the impact by replacing or providing substitute resources.
Modified Diamond Interchange	An interchange with any variation of a diamond interchange, including asymmetrical ramp placement and spacing.

Monitoring Wells	Wells drilled for the purpose of water quality sampling and measurement of water levels; not typically used as a source of water.
Mottles	Different colored soils inclusions (usually oxidized iron) than the matrix color this is caused by fluctuations in hydrology.
MPO	Metropolitan Planning Organization - Organization responsible for comprehensive transportation planning and programming for urbanized areas.
NAAQS	National Ambient Air Quality Standards - Federal standards that establish allowable concentrations and exposure limits for ozone, CO, and PM ₁₀ .
Nitrogen Oxides	(NO _x) precursor emission that forms from high-temperature combustion processes. React with VOCs in the presence of heat and sunlight to form ozone.
Non-Attainment Area	A geographic region that the U.S. EPA has designated as not meeting the NAAQS.
Odonata	Scientific name for dragonflies and damselflies.
Organic Wastes	Waste containing carbon compounds, urban or agricultural.
Ozone	(O ₃) A colorless gas with a sweet odor that is not a direct emission from transportation sources, but is formed when VOCs and NO _x from car exhausts and certain industrial emissions combine in the presence of sunlight. Ground-level ozone is associated with smog conditions and initiates damage to lungs, trees, crops, and materials.
Palustrine	Pertaining to or living in a marsh or swamp.
Partially Folded Diamond Interchange	Partially folded diamond interchanges are the same as diamond interchanges, except one ramp is a loop ramp. This configuration is typically used to avoid impacts and obstructions in a specific quadrant of an interchange.

Pedestrian Survey	A site assessment technique that involves closely examining the relevant resources in the area either by foot or by vehicle.
pH	The negative logarithm of hydrogen ion concentration, a measure of acidity.
Phase I	Environmental site assessment; consists of records check and at minimum a pedestrian survey.
Physiography	The study of natural features of the earth's surface and the distribution of flora and fauna.
PPV	Peak Particle Velocity - Maximum instantaneous positive or negative peak of vibratory motion.
Record of Decision	The Record of Decision (ROD) is the document of decision provided by the FHWA and completes the EIS process. The ROD is signed no sooner than thirty (30) days after publication of the FEIS in the Federal Register or ninety (90) days after publication of a notice for the DEIS, whichever is later.
Right-of-Way	ROW - Priority path for construction and operation of highways, rail, etc. The ROW phase occurs at the time in which the land within the ROW is purchased.
Riparian	Adjacent to a stream or river.
Riverine	Wetlands and deep-water habitats contained within a channel. Often named rivers, streams and creeks.
Scatters	To distribute loosely by or as if by sprinkling.
Section 4(f)	Refers to legal requirements concerning the use of historical and archaeological resources in the Department of Transportation Act.
Section 106	Refers to legal requirement concerning the use of historical and archaeological resources in the National Historic Preservation Act.
Section 401	Refers to legal requirements concerning the use of navigable waters in the Clean Water Act.

Section 404	Refers to legal requirements concerning the use of wetlands in the Clean Water Act.
Shovel Testing	Probing the soil in an archaeological survey and sifting the soil through a 9.8mm (1/4") mesh.
Silurian Age	Refers to age which bedrock was formed; 425 million years before present.
SIP	State Implementation Plan - A document that contains procedures to comply with the NAAQS, as specified in the CAAA. Prepared by states and submitted to the U.S. EPA for approval.
Successional Forests	Forests undergoing a directional change toward a mature vegetation type.
TDM	Transportation Demand Management - This is the uses of techniques to control demand on roadways, such as incentives for transit use and increase parking costs in the central business district.
Terrace	Old floodplain.
Tight Diamond Urban Interchange	These interchanges have the same configuration as diamond interchanges except the spacing between the ramp termini is 400 feet or less.
TIP	Transportation Improvement Program - A program of transportation projects consistent with the Transportation Plan. Shows projects to be funded under federal programs for a four-year period.
Topography	Elevation and spatial relationships of the land.
Transverse Encroachment	A highway improvement that crosses perpendicular to the regulatory floodplain.
Trichoptera	The scientific name for the family Caddisflies.
TSM	Transportation System Management - This is the uses of technique to improve the level of efficiency at which the existing transportation system works, by implementing methods uses as synchronization of traffic signals.

Turbidity	Refers to amount of suspended solids in the stream or river; In turbid water conditions light is scattered and absorbed rather than transmitted in a straight line.
Vertebrates	Animals having a backbone or spinal column.
Viewshed	The surface area visible to and from a given point or collection of points.
VOC	Volatile Organic Compounds - A group of chemicals that react in the atmosphere with NO _x in the presences of heat and sunlight to form ozone, such as gasoline fumes and oil-based paints.
Windshield Survey	Visual inspection of project area by vehicle from the public right-of-way.
Wisconsin Age	Refers to the most recent glacial advance; ending approximately 12,000 years before present.

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